NON-TECHNICAL SUMMARY (NTS)

Project Title	Study to improve the stunning of birds
Key Words	Stunning, Turkeys, Ducks, Chickens, Restraint
Expected duration of the project	5 year(s) 0 months

Purpose of the project (as in ASPA section 5C(3))

Purpose	
No	(a) basic research;
	(b) translational or applied research with one of the following aims:
No	(i) avoidance, prevention, diagnosis or treatment of disease, ill-health or other abnormality, or their effects, in man, animals or plants;
No	(ii) assessment, detection, regulation or modification of physiological conditions in man, animals or plants;
Yes	(iii) improvement of the welfare of animals or of the production conditions for animals reared for agricultural purposes.
No	(c) development, manufacture or testing of the quality, effectiveness and safety of drugs, foodstuffs and feedstuffs or any other substances or products, with one of the aims mentioned in paragraph (b);
No	(d) protection of the natural environment in the interests of the health or welfare of man or animals;
No	(e) research aimed at preserving the species of animal subjected to regulated procedures as part of the programme of work;
No	(f) higher education or training for the acquisition, maintenance or improvement of vocational skills;
No	(g) forensic inquiries.

Describe the aims and objectives of the project (e.g. the scientific unknowns or scientific/clinical needs being addressed):

The project aims to assess existing and develop new restraint and stunning systems for turkeys, ducks, geese and chickens that improve stun effectiveness with respect to animal welfare, whilst minimising negative impact on meat quality, ensuring industry relevance.

What are the potential benefits likely to derive from this project (how science could be advanced or humans or animals could benefit from the project)?

Inadequate stunning resulting in the recovery of consciousness prior to, during or after bleeding will result in unacceptable suffering, pain and distress to the animal. This can be further compromised by stressful restraint and when an inadequate neck cut fails to sever both carotid arteries. The expected welfare benefits of the proposed study are the development and testing of new restraint and head-only stunning systems that improve the quality and duration of unconsciousness following head-only electrical stunning. Furthermore, the proposed study will examine whether or not head-only and/or head-to-body electrical stunning with modification can be a reliable stunning method for waterfowl. The study will also examine the effectiveness of air pellet weapons as a culling/slaughter method for turkeys and geese. Stun guidelines will be developed for existing and new stunner designs that improve effectiveness and animal welfare. Finally, and crucially it will improve validity of practical measures used to assess insensibility in poultry and waterfowl. The results from the proposed project would provide scientific evidence that could directly underpin legislation (UK, EU and worldwide). These findings would also have direct relevance to animal welfare NGOs (development of guidelines and training), other animal charities, poultry producers and stunner manufacturers.

What types and approximate numbers of animals do you expect to use and over what period of time?

387 Turkeys 247 Geese 217 Ducks 574 Chickens (layer hens and broilers) Total 1425 birds over 5 years

In the context of what you propose to do to the animals, what are the expected adverse effects and the likely/expected levels of severity? What will happen to the animals at the end?

The maximum severity expected is moderate. Potential adverse effects could include: - Stress from handling (low severity, high likelihood), this is unavoidable, but will be minimised when possible. - Pain/discomfort from positioning of electrodes (low severity and likelihood). - Pre-stun shocks (medium severity and very low likelihood), which will be continuously examined for. Any shock will be transient before the induction of the unconsciousness. - Spinal seizures where the animal is conscious (moderate severity, very low likelihood). Will be continuously monitored for. If an animal is identified as having a spinal cord seizure it will immediately be euthanatised. - Distress associated with recovery from the stun (high likelihood and mild severity). This is unavoidable in recovery experiments. The assessment period will be kept as short as possible and the birds will be immediately restunned and dispatched after this period. - Infection from surgical implanting of electrodes (OPTIONAL) (low severity, low likelihood). All birds will be operated on using aseptic techniques and will be given antibiotics post procedure. Also the time period between surgery and electrical stunning will be no longer than 1 day, further reducing the risk of infection on welfare. Any birds that are showing signs of pain and distress during the instrumentation process will be immediately euthanised. Birds deemed to be in ill health will be removed from the study and euthanised. As the project is examining stunning/slaughter methods, all animals that enter the stunning/slaughter phase of the project will be killed during the study.

Application of the 3Rs

Replacement

State why you need to use animals and why you cannot use non-protected animal alternatives

Replacement

There is no meaningful way of assessing the performance of electrical stunning equipment with *in vitro*, anaesthetised or already dead bird preparations. Live birds are necessary, so they relate to standard commercial slaughter practices.

Reduction

Explain how you will ensure the use of minimum numbers of animals

Reduction

The sample sizes for the project are the minimum necessary for meaningful results, this was determined by statistical analysis of the results from a previous project in chickens. Where possible a stepped approach will be used, where the study will be stopped once the required results are generated.

Refinement

Explain the choice of animals and why the animal model(s) you will use are the most refined, having regard to the objectives. Explain the general measures you will take to minimise welfare costs (harms) to the animals.

Refinement

Turkeys, ducks, geese and chickens are being used, as they are the species in which these stunning methods are currently or will be used commercially for slaughter for human consumption. Any birds that experience trauma not associated with the stunning method or have been deemed to not be immediately rendered unconscious will be euthanised.